

Appl. S.N.: 10/629,146
Amdt. Dated: February 8, 2006
Reply to Office Action of November 6, 2006

RD-29279-1

Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An article cleaning apparatus for cleaning articles using a solvent based cleaning fluid and for cleaning the solvent based cleaning fluid without using distillation, the apparatus comprising:
 - an air management mechanism;
 - a cleaning basket assembly;
 - a fluid processing mechanism comprising an ultrafiltration filter having a pore size of about 0.01 microns to about 0.2 microns; and
 - a controller configured to clean the articles in the cleaning basket assembly using the solvent based cleaning fluid and to clean the solvent based cleaning fluid using the ultrafiltration filter to remove bacteria from the solvent based cleaning fluid without using distillation on the solvent based cleaning fluid, wherein
 - said air management mechanism is in communication with said cleaning basket assembly and with said fluid processing mechanism;
 - said cleaning basket assembly is in communication with said fluid processing mechanism; and
 - said controller is in communication with said air management mechanism, with said cleaning basket assembly, and with said fluid processing mechanism.
2. (currently amended) The apparatus of claim 1, wherein said fluid processing mechanism further comprises a flushing device operable to reverse the flow of the solvent based cleaning fluid through said ultrafiltration filter.

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3. (original) The apparatus of claim 1, wherein said ultrafiltration filter is operable to only allow materials having a molecular weight of less than about 100,000 daltons to pass through.
4. (original) The apparatus of claim 1, wherein said ultrafiltration filter comprises an ultrafiltration membrane.
5. (original) The apparatus of claim 4, wherein said ultrafiltration membrane is in a spiral wound configuration.
6. (currently amended) The apparatus of claim 1, wherein the solvent based cleaning fluid comprises a siloxane.
7. (currently amended) The apparatus of claim 1, wherein said fluid processing mechanism [[4]] further comprises a particulate filter in communication with said cleaning basket assembly and said ultrafiltration filter.
8. (original) The apparatus of claim 7, wherein said particulate filter has a mesh size in a range from about 0.5 microns to about 50 microns.
9. (canceled)
10. (currently amended) The apparatus of claim 1, wherein said fluid processing mechanism further comprises a mechanical filter in communication with said cleaning basket assembly [[2]] and said ultrafiltration filter.
11. (original) The apparatus of claim 10, wherein said mechanical filter has a mesh size in a range from about 50 microns to about 1000 microns.
12. (canceled)
13. (currently amended) An article cleaning apparatus for cleaning articles using a solvent based cleaning fluid or a water based cleaning fluid and for cleaning the solvent based cleaning fluid without using distillation, the apparatus comprising:

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an air management mechanism;
a cleaning basket assembly;
a fluid processing mechanism comprising a working fluid device, a fluid regeneration device, and a clean fluid device, wherein said fluid regeneration device comprises an ultrafiltration filter having a pore size of about 0.01 microns to about 0.2 microns; and

a controller configured to clean the articles in the cleaning basket assembly using the solvent based cleaning fluid or the water based cleaning fluid and to clean the solvent based cleaning fluid using the ultrafiltration filter to remove bacteria from the solvent based cleaning fluid without using distillation on the solvent based cleaning fluid,

wherein

said air management mechanism is in communication with said cleaning basket assembly, with said working fluid device, and with said clean fluid device;

said cleaning basket assembly is in communication with said working fluid device and with said clean fluid device; and

said controller is in communication with said air management mechanism, with said cleaning basket assembly, with said working fluid device, with said fluid regeneration device, and with said clean fluid device.

14. (currently amended) The apparatus of claim 13, wherein said fluid regeneration device further comprises a flushing device wherein said flushing device is operable to reverse the flow of the solvent based cleaning fluid through said ultrafiltration filter.

15. (original) The apparatus of claim 13, wherein said ultrafiltration filter is operable to only allow about materials having a molecular weight of less than about 100,000 daltons to pass through.

16. (original) The apparatus of claim 13, wherein said ultrafiltration filter comprises an ultrafiltration membrane.

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17. (original) The apparatus of claim 16, wherein said ultrafiltration membrane is in a spiral wound configuration.
18. (currently amended) The apparatus of claim 13, wherein the ~~article cleaning apparatus uses a solvent based cleaning fluid~~ comprises a siloxane.
19. (original) The apparatus of claim 13, wherein said fluid regeneration device further comprises a particulate filter in communication with said cleaning basket assembly and said ultrafiltration filter.
20. (original) The apparatus of claim 19, wherein said particulate filter has a mesh size in a range from about 0.5 microns to about 50 microns.
21. (currently amended) The apparatus of claim 19, wherein said particulate filter is a cartridge filter fabricated from materials selected from the group consisting of thermoplastics, polyethylene, polypropylene, polyester, aluminum, stainless steel, metallic mesh, sintered metal, ceramic, diatomaceous earth, and any combination thereof.
22. (original) The apparatus of claim 13, wherein said fluid regeneration device further comprises a mechanical filter in communication with said cleaning basket assembly and said ultrafiltration filter.
23. (previously presented) The apparatus of claim 22, wherein said mechanical filter has a mesh size in a range from about 50 microns to about 1000 microns.
24. (canceled)
25. (original) The apparatus of claim 13, wherein the fluid regeneration device comprises a regeneration cartridge comprising said ultrafiltration filter.
- 26-29. (canceled)

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30. (original) The apparatus of claim 25, wherein said regeneration cartridge comprises a mechanical filter, wherein said mechanical filter has a mesh size in a range from about 50 microns to about 1000 microns.

31. (original) The apparatus of claim 25, wherein said regeneration cartridge comprises a particulate filter, wherein said particulate filter has a mesh size in a range from about 0.5 microns to about 50 microns.

32-34. (canceled)

35. (new) A dry cleaning apparatus comprising:
a cleaning basket assembly;
an air management mechanism; and
a fluid processing mechanism, wherein the cleaning basket assembly holds articles, the air management mechanism provides air intake and air outtake for the cleaning basket assembly and the fluid processing mechanism, the fluid processing mechanism comprises an ultrafiltration filter with a pore size of about 0.01 microns to about 0.2 microns, a solvent based cleaning fluid cleans the articles in the cleaning basket assembly and passes through the ultrafiltration filter, thereby removing bacteria from the cleaning fluid, and the apparatus does not perform distillation on the cleaning fluid.

36. (new) The apparatus of claim 35, wherein the ultrafiltration filter only allows materials having a molecular weight of less than about 100,000 daltons to pass through.

37. (new) The apparatus of claim 35, wherein the ultrafiltration filter comprises an ultrafiltration membrane.

38. (new) The apparatus of claim 37, wherein the ultrafiltration membrane comprises a spiral wound configuration.

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39. (new) The apparatus of claim 37, wherein the ultrafiltration membrane comprises hollow fiber filters.
40. (new) The apparatus of claim 35, wherein the cleaning fluid passes through the ultrafiltration filter as the cleaning fluid cleans the articles.
41. (new) The apparatus of claim 35, wherein the cleaning fluid passes through the ultrafiltration filter after the cleaning fluid cleans the articles.
42. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a mechanical filter with a mesh size of about 50 microns to about 1000 microns, and the cleaning fluid passes sequentially through the mechanical filter and the ultrafiltration filter.
43. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a particulate filter with a mesh size of about 0.5 microns to about 50 microns, and the cleaning fluid passes sequentially through the particulate filter and the ultrafiltration filter.
44. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a mechanical filter with a mesh size of about 50 microns to about 1000 microns and a particulate filter with a mesh size of about 0.5 microns to about 50 microns, and the cleaning fluid passes sequentially through the mechanical filter, the particulate filter and the ultrafiltration filter.
45. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a water adsorption media, and the cleaning fluid passes sequentially through the ultrafiltration filter and the water adsorption media.
46. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a cleaning fluid regeneration adsorption media, and the cleaning fluid passes sequentially through the ultrafiltration filter and the cleaning fluid regeneration adsorption media.

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47. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a water adsorption media and a cleaning fluid regeneration adsorption media, and the cleaning fluid passes sequentially through the ultrafiltration filter, the water adsorption media and the cleaning fluid regeneration adsorption media.

48. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a working fluid device that passes the cleaning fluid and discharges water, and the cleaning fluid passes sequentially through the working fluid device and the ultrafiltration filter.

49. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a clean fluid device that provides a reservoir for the cleaning fluid, and the cleaning fluid passes sequentially through the ultrafiltration filter and the clean fluid device.

50. (new) The apparatus of claim 35, wherein the fluid processing mechanism comprises a working fluid device that passes the cleaning fluid and discharges water and a clean fluid device that provides a reservoir for the cleaning fluid, and the cleaning fluid passes sequentially through the working fluid device, the ultrafiltration filter and the clean fluid device.